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CENTRAL INTELLIGENCE AGENCY
WASHINGTON, D.C. 20505
NATIONAL FOREIGN ASSESSMENT CENTER

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27 July 1981

MEMORANDUM FOR: TNF Interdepartmental Group

SUBJECT: Amended Unclassified Version of the Threat Paper

Attached is a revised version of the unclassified threat paper which has been given final clearance by the Intelligence Community. Vertical lines in the margin indicate where the text has been altered. Your attention is called to the change to figures on lines 3 and 6 of the section on "Nuclear-Capable Tactical Aircraft, page 9. Comments or queries should be addressed to

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Raymond J. McCrory
Chief,
Arms Control Intelligence Staff

Attachment:
As stated

UNCLASSIFIED

22 July 1981

THE THREATOverall Level of Soviet Defense Spending

For more than two decades, the USSR has been engaged in a major buildup of its military forces. Since 1964 there has been an across-the-board expansion and modernization of all Soviet forces. Despite changes in the international environment, Soviet espousal of a detente policy, and strategic arms limitation agreements, the overall pace of the Soviet military buildup has remained steady. Annual Soviet military spending has nearly doubled in real terms and now consumes over one-eighth of Gross National Product (GNP). The latest estimates in constant ruble prices indicate that Soviet defense spending has grown an average of 4 to 5 percent a year since at least 1965. During most of this period, defense spending probably accounted for a constant 11 to 13 percent of Soviet GNP, because defense and the economy were growing at about the same rate.

In the future, we expect the Soviet economy of the 1980's to be very different from that of the 1970's. Over the next several years developing demographic and energy problems will combine with difficulties of longer standing, to slow the economy's rate of growth. Because the annual growth increments in the 1980's will be smaller than in most of the 1970's Soviet leaders will have to make tougher choices among defense, investment, and consumption. The political competition for resources is likely to become more intense.

Despite these bleak economic prospects, however, we have yet to see any evidence that there will be a shift of resources away from the defense sector.

On the contrary, evidence of testing as well as construction growth at defense industries and military R&D facilities suggest continued real growth in Soviet defense spending during the 1980's.

-- If Soviet defense spending continues growing at or near its historic rate of 4-5 percent a year and the economy continues to decline, the share of GNP taken by defense would steadily increase, and could amount to 15 percent by 1985. Indeed, this trend appears to have already begun. Between 1979 and 1980, the defense share of GNP increased by about a percentage point to 12-14 percent.

Doctrine

Soviet leaders view military might as a primary instrument of policy. This attitude has been embodied in and reinforced by a political and economic system that gives priority to military requirements, and by ambitious military doctrine that calls for forces structured to fight and win future conflicts.

During the late 1950's and early 1960's, Soviet military thinking held that a war between NATO and the Warsaw Pact would automatically escalate to theater-wide nuclear war and to global nuclear war immediately thereafter. By the early 1970's, Soviet military doctrine evolved to the point where it allowed for a short period of conventional conflict before the initiation of nuclear operations. Soviet military doctrine today emphasizes that an extended phase of conventional warfare could precede nuclear war in Europe. Conventional operations during that period would include attacks against NATO's nuclear capability.

Many of the weapon systems the Soviets have developed in support of their military doctrine are capable of a broad range of missions, from deep interdiction of the enemy rear area to close support of tactical commanders. Similarly, many of these weapon systems can be used in either conventional, nuclear or chemical roles. Although reference is made in this paper to theater nuclear, conventional, and strategic forces, NATO recognizes, as the Soviets clearly do that virtually all of the Soviet systems pose a potentially serious threat to NATO in general and to NATO theater nuclear forces in particular. Understanding this problem requires a view of the entire spectrum of the Warsaw Pact threat.

Theater Nuclear Forces Threat

Warsaw Pact theater nuclear forces (TNF) are the focal point of deliberations concerning the overall threat. For the purposes of this analysis, it is useful to break the Soviet TNF threat into three general categories, each of which have somewhat different political-military properties. These are:

- Short-Range TNF (SRTNF) consisting of systems capable of striking only those targets that are in the general region of the battlefield (illustratively with ranges less than 150km);
- Medium-Range TNF (MRTNF) consisting of those systems with a capability to hit targets in NATO territory beyond the general area of the battlefield, but without a clear military capability to strike deep targets from bases in the Soviet Union (illustratively with ranges between 150km and 1,500km);

-- Long-Range TNF (LRTNF) consisting of those systems with an unambiguous military capability to strike targets in Western Europe from bases in the Soviet Union (illustratively with ranges in excess of 1,500km).

Soviet Land-Based LRTNF Missiles

The Soviet land-based long-range theater nuclear missile force now consists of a shrinking SS-4 MRBM and SS-5 IRBM force and a new and growing SS-20 force. The Soviet MR/IRBM force remained relatively constant through the 1970's with about 600 launchers deployed. Even with the deployment of the SS-20 starting in 1977, the number of MR/IRBM launchers in the force has stayed around 600 as the Soviets have deactivated SS-4 and SS-5 launchers. While there has been a slight decline in the number of launchers deployed opposite NATO, the decline is more than compensated for by an increase in the number of deliverable weapons opposite NATO.

As of July 1981, the Soviets have deployed some 250 operational SS-20 launchers and about 100 additional launchers will be located at bases that are still under construction. Of the 250 operational launchers, about 175 with some 525 warheads are deployed against NATO. At bases still under construction, another 65 launchers with some 195 warheads will be similarly deployed. The remaining SS-20's, operational or under construction, are deployed against the Far East. There are in addition about 750 warheads on 250 SS-20 refire missiles that have been deployed at operational bases.

For the past few years the Soviets have been deploying SS-20's at an overall rate of about one a week. The program continues apace with no evidence that it is nearing an end.

On occasion, the Soviets have stated that they are merely replacing older missile systems with the SS-20. Not only does this assertion disregard the

three warheads carried by each SS-20, as well as other qualitative improvements such as improved accuracy and increased mobility, but it also ignores the fact that there are still about 350 SS-4 and SS-5 launchers deployed today. These older missiles can be used effectively against a variety of targets including airfields, air defense networks, ports, and industrial facilities.

The introduction of the SS-20 into the force significantly increases the threat posed by the Soviet LRTNF ballistic missile force:

- the mobility of the SS-20 not only increases survivability but is a major improvement in Soviet warfighting capabilities because it increases refire potential as well as the viability of withholding nuclear systems based in the Soviet Union;
- survivability is also enhanced by the camouflage, concealment, and deception practiced by SS-20 units when deployed in the field;
- the solid propellant SS-20 offers considerably improved reaction time as compared to the liquid fueled SS-4 and SS-5;
- the range of the SS-20 allows basing in the Urals, providing some additional protection from conventional attack with no degradation in target coverage. Even from Soviet bases well east of the Urals--which are almost certainly intended for coverage of China--SS-20 launchers could be retargetted on several NATO countries. And SS-20 units located farthest to the East could be transported within range of Western Europe in a matter of days.

Thus, while Soviet discussions of "medium-range rockets" tend to center on those deployed in the European USSR--certainly the bulk of the force which

is clearly intended for coverage of NATO--we cannot ignore the potential embodied in the technical characteristics of the SS-20 described above.

Long-Range Nuclear Strike Aircraft

In addition to the Bear and Bison long-range bombers that are primarily intended for intercontinental strike missions, the Soviets currently have in their inventory three aircraft capable of carrying out theater nuclear strikes to ranges in excess of 1,500km on round-trip missions--Badger, Blinder, and Backfire. These bombers are assigned to both the Soviet Air Force (SAF) and Soviet Naval Aviation (SNA).

Those bombers assigned to the SAF are assessed to have predominantly a land attack mission, either conventional or nuclear. During the conventional phase of an East-West conflict, they could be used in large numbers with the primary objective of reducing NATO's nuclear deterrent capabilities and achieving air superiority. During the nuclear phase, these aircraft could conduct nuclear attacks designed to complement strikes by ballistic missiles. They would probably be used primarily against those targets that did not pose an immediate strategic threat to the USSR such as troop concentrations, storage facilities, and industrial centers, thus freeing the ballistic missile forces to concentrate on time urgent targets. LRTNF bombers assigned to Soviet Naval Aviation are assessed to have predominantly an antishipping mission although they are capable of being used against land targets.

Currently there are more than 300 Badger aircraft located in the western USSR. The Badger has been in the operational force since the mid-1950's. There are another 150 SAF Badgers deployed in the eastern USSR. Some of these aircraft, however, are non-strike variants (tankers, reconnaissance, and electronic countermeasures support aircraft). In addition, Soviet Naval Aviation has more than 450 Badgers most of which are deployed in the west.

The TU-22 Blinder, which has a supersonic dash capability, became operational some twenty years ago. The Blinder was deployed only to bases in the western USSR and currently some 200 Blinders are deployed. Seventy-five percent of them are assigned to the SAF and the remainder to Soviet Naval Aviation.

The Backfire, which became operational seven years ago, represents a significant improvement over the Badger and Blinder in range, payload, and penetration capabilities. Currently about 100 Backfires are deployed in the western USSR with SAF and SNA.

The Badger, Blinder, and Backfire have sufficient range capability to strike virtually all of European NATO from their operating bases in the Soviet Union.

Medium- and Short-Range TNF

Soviet medium- and short-range theater nuclear forces, like their LRTNF counterparts, have been the subject of broad and intensive modernization and expansion programs. The evidence to date indicates that the nuclear weaponry available to Soviet and Non-Soviet Warsaw Pact (NSW)) ground force commanders has and will continue to undergo important changes through the mid-1980's. Some of these changes reflect the evolutionary development of existing weapons systems--including the expansion of the number of launchers per unit--or their replacement by more modern follow-ons. Other changes involve the introduction of new categories of weaponry, but all will contribute to developing a ground force nuclear inventory that is more flexible, effective, ready, and survivable.

In terms of evolutionary developments, since the sixties, Soviet and NSW forces have been fielding the present FROG rockets and Scud missile systems to replace earlier, shorter-range versions of these systems as well as the Scaleboard, a medium-range ballistic missile. In addition, the Soviets have increased the number of battalions or brigades containing the shorter-range systems and--even

more important--have markedly expanded the number of launchers assigned to such units.

During the last five years, the Soviets have begun fielding an entirely new family of short and medium-range missiles for their ground forces, the SS-21, SS-22, and SS-X-23, with the aim of improving the range, accuracy, and responsiveness of this force as a whole and increasing its utility in conventional as well as nuclear operations. Like their predecessors, these systems can deliver nuclear, chemical and conventional warheads, including a high explosive cluster munition. They represent a quantum leap in accuracy and range in comparison with the systems they are replacing and thus a major improvement in Soviet warfighting capabilities. The added range and accuracy they possess will:

- expand substantially the area in which NATO targets can be struck;
- increase the survivability of the systems by permitting them to remain farther to the rear;
- increase the probability of knocking out intended targets, thus reducing the need to allocate multiple strikes against a single target;
- permit the use of smaller nuclear warheads, thus permitting the Soviets to conduct nuclear strikes in the proximity of their own forces.

Since 1973 the Soviets have added a significant new category of battlefield nuclear weaponry to their inventory with the introduction of nuclear-capable artillery units. The original nuclear-capable towed artillery pieces in these units gradually are being replaced by self-propelled versions which will provide increased mobility, greater rate of fire and longer range. In addition, the new self-propelled pieces will be able to move rapidly to a new firing position after each mission, which will greatly lessen their vulnerability to NATO

counter battery fire. Furthermore, with minimal support or pre-fire preparation compared to rockets or missiles, the Soviets can open fire with nuclear artillery within minutes of target acquisition. The Soviets have nuclear-capable artillery units earmarked for operations against NATO and some expansion of this capability is expected by 1985.

The actual nuclear strike potential represented by these systems is substantially higher than the total number of launchers if refire capabilities are taken into account.

With these nuclear-capable ground force systems, the Soviets could strike NATO targets immediately in front of their positions and out to a distance of almost 1,000km. Deeper NATO targets, such as advancing reserves, could be targetted by LRTNF or by intercontinental strike forces possessed by the Strategic Rocket Forces (SRF). Soviet ground force nuclear systems are designed to destroy both larged fixed (e.g., an airfield) and small mobile (a tactical command post) targets.

Nuclear-Capable Tactical Aircraft

Numerically, tactical aircraft constitute the single most significant part of Soviet nuclear-capable forces. Of 9,500 fighter-type aircraft in Soviet and Warsaw Pact combat units, some 5,700 are capable of delivering nuclear weapons, although a large portion are in fighter or reconnaissance units that devote most of their training to air-to-air and reconnaissance missions. Of this number, about 4,400 are opposite NATO. The newest of these consist primarily of three late-model types: SU-24 Fencers, late-model Fitters, and Floggers.

The SU-24 Fencer, first operational in 1974, is assessed to have a deep strike interdiction role and is capable of delivering nuclear bombs under all-weather conditions. Of 450 in the inventory, 250 are currently in the western USSR. The Fencer, depending on its weapon configuration, can strike virtually

all of the NATO area, excluding France, the U.K. and Portugal from its bases in the Soviet Union, and with deployment forward in Eastern Europe, would cover approximately the same targets as Badger and Blinder aircraft.

The late-model Fitter is a variable-geometry wing variant of the SU-7 Fitter A first deployed in 1960. Of about 700 in combat units, about 450 are in units in the west with the rest along the Sino-Soviet border region. Currently only one NSWP nation, Poland, has a variant of this aircraft, and we believe it would have a nuclear delivery role.

The Flogger is deployed in several variants, that are optimized for either air-to-air or ground attack missions. Like the late-model Fitter, the Flogger has some capability to deliver weapons under all weather conditions. Of the 2,700 or so in the inventory, approximately 2,000 are in the west. All NSWP nations have variants of the Flogger in their national forces. We would expect some of these to have nuclear roles.

During the conventional phase of a war in Europe, most tactical aircraft would be committed to theater-wide air operations or support of Pact ground forces. During the initial nuclear strike, Warsaw Pact tactical air assets probably would be used primarily in battlefield strikes in close proximity to Pact forces. The Soviets probably would place increased reliance on air-delivered weapons during subsequent nuclear operations, when the effectiveness of NATO air defense systems presumably would be reduced.

Although the Warsaw Pact trailed NATO in 1970 in numbers of nuclear-capable tactical aircraft, they have since reversed the disadvantage with an active modernization effort. The Pact now enjoys about a 2.4 to one advantage in Europe and about a 1.7 to one advantage worldwide. These relationships are likely to hold through 1985.

Conventional Forces

Over the last 15 years, the Warsaw Pact has undergone significant changes in both quantity and quality of conventional military forces. The result of this program has been the development of a very large, highly mobile, combined-arms force which is offensively oriented and capable of sustained operations. The strategic goal of this force is to isolate and defeat NATO forces in place before NATO can mobilize and bring its considerable economic potential to bear.

There has been a steady program of research, development and introduction of modern weapons systems and supporting equipment into all Pact forces. Since 1965, the increases in equipment range from a low of 30 percent for the number of tanks, to more than 100 percent for armored fighting vehicles. Growth in force size has been accompanied by qualitative improvements throughout the force structure. The Soviets are re-equipping with weapons systems and vehicles designed to increase mobility, firepower and survivability. The most modern Warsaw Pact tanks, the T-64 and T-72, now comprise about 25 percent of the tank force opposite NATO. In addition, the Soviets have introduced new self-propelled artillery, armored fighting vehicles and upgraded surface-to-air missiles (SAMs) and anti-tank guided missiles (ATGMs).

While the quantitative increase in total Warsaw Pact air forces has not been as consistent or dramatic as in the ground forces, the qualitative changes have been most impressive. These systems have:

- new precision-guided air munitions;
- improved on-board navigation systems for tactical aircraft--
which should reduce reliance on ground-based control;
- improved low altitude intercept capabilities;
- greater combat radius and payload.

From the standpoint of force-generation capabilities, the Pact has a numerical advantage in terms of standing forces even though many divisions are manned at reduced or cadre strength in peacetime. Substantial mobilization, preparation, and movement would be required before this entire force could be committed. Many forward area divisions, however, are maintained at high levels of peacetime preparedness and could be committed prior to the availability of forces garrisoned in the western regions of the USSR.

In the near future, Warsaw Pact force levels are expected to remain fairly constant while research, development, testing and fielding of new sophisticated weapons systems will continue:

- the Soviets are expected to continue developing significantly improved tanks;
- ground force air defense capabilities are also expected to be enhanced with the introduction of new, mobile tactical SAM systems;
- modernization of the air force is expected to continue. By 1985, new aircraft will be introduced. These include a new ground attack aircraft now entering service, which will provide the Soviets with improved capabilities in close air support, as well as new fighters designed for air-to-air missions.

Thus, the across-the-board modernization effort that has been an ongoing effort in the realm of conventional forces for over the past decade will continue for the foreseeable future, presenting a formidable threat to NATO's TNF and conventional forces. Insofar as the Soviets believe they could neutralize NATO's nuclear deterrent, their advantages in conventional forces will become all the more significant and threatening to the Alliance.

Strategic Forces

The vitality seen in Soviet programs to improve their conventional and theater nuclear forces is clearly evident in Soviet programs to improve their

intercontinental attack forces. The Soviet intercontinental strike force is composed primarily of silo-based ICBMs and a lesser number of SLBMs carried by nuclear submarines. The steady growth in the number of intercontinental delivery vehicles has been accompanied by a dramatic increase in the number of weapons that Soviet delivery vehicles carry, as well as in their destructive potential.

ICBM improvements were due primarily to modernization of the land-based ICBM force which continued, throughout the 1970's, as the Soviets equipped more than 750 launchers with the latest generation of ICBMs--the SS-17, SS-18, and SS-19. This improved the force in several ways. The newer missiles carry multiple independently targetable reentry vehicles (MIRVs), so that the force can attack more targets even though it has fewer launchers than it had in 1972.

SSBNs

The Soviets have also increased the size of their strategic force at sea. Beginning in 1966, the Soviet submarine-launched ballistic missile (SLBM) force was expanded and modernized, with the launch of the first Y-class nuclear-powered ballistic missile submarine (SSBN), which carries 16 SS-N-6 missiles. The range of the missiles permitted the missile-carrying submarines for the first time to cover targets in the U.S. from the open ocean. The Y-class program was followed in 1973 by introduction of the D-class, which carries 12 or 16 launchers for long-range SS-N-8 or SS-N-18 missiles. These missiles enable the launching submarine to attack targets in the United States while operating in or near Soviet-controlled waters. The SS-N-18 is the first Soviet SLBM with MIRVs. In 1980, the Soviets launched the first SSBN of a new class--the Typhoon, the largest submarine in the world.

Bombers

In contrast to the strategic missile forces, the Soviet intercontinental bomber force has declined slightly in size since the mid-1960's. It now consists of about 150 Bear and Bison aircraft--both types introduced in the mid-1950's.

Future Systems

With respect to future systems, the Soviets are now in position to improve their strategic forces even further. There are a number of new or modified strategic offensive systems in early stages of development. All of these systems are expected to show improvements in one or more areas including accuracy, reliability, payload and responsiveness.

One of the Soviets' principal goals in modernizing their intercontinental attack force has been to improve the accuracy of their ICBMs and thus their potential for destroying U.S. ICBM launchers. Calculations of the theoretical capability of the Soviet ICBM force shows that the bulk of U.S. ICBM launchers would have been destroyed in a Soviet first strike in 1980. The improving accuracy of the MIRVed Soviet ICBM force will further increase the risk to the U.S. silo-based ICBM force in the 1980's. However, U.S. SLBMs aboard ballistic missile submarines at sea, alert strategic bombers, and surviving ICBMs will be able to retaliate in the aftermath of a Soviet first strike. Moreover, the U.S. is currently taking steps to reduce the vulnerability of its land-based ICBM force.

Strategic Defense Forces

The Soviets have complemented their forces for strategic attack with a strong defensive effort designed to reduce damage from an enemy strategic attack. They have developed systems with the capability to detect and attack incoming

SLBMs and older U.S. ICBMs. The Soviets have also continued to emphasize measures, familiar from World War II, for shooting down enemy bombers and protecting civilians.

The Soviets have deployed around Moscow a limited anti-ballistic missile (ABM) defense. The system's current capabilities to counter a large-scale missile attack are poor but the Soviets are continuing research and development on new ABM systems.

The Soviet strategic air defense forces, which have remained fairly stable since the mid-1960's, consist of surface-to-air missiles (SAMs) and interceptor aircraft designed for use against enemy bombers. In the mid-to-late 1970's the number of launchers decreased slightly, as some older sites were deactivated, and the force now stands at about 10,000. The Soviets should begin fielding a new SAM soon, which is expected to be a significant improvement over the earlier SAM systems in terms of target handling and firepower, in addition to having potentially better capabilities at low altitudes. The number of strategic interceptor aircraft declined from the mid-1960's until the early 1970's, as the defensive missile force expanded. In recent years their capabilities have improved, however, as older aircraft were almost entirely replaced with missile-equipped, all-weather aircraft. Present Soviet air defenses have good capabilities to defend against bombers at medium and high altitudes. They have major deficiencies in capabilities against aircraft and cruise missiles at low altitudes.

Soviet civil defense is a nationwide program under military control. The goals of this program are to protect the leadership, the work force at key economic facilities, and the general population, in that order; to maintain the continuity of economic activity in wartime; and to enhance the country's capability for recovery from the effects of war. The effort to protect people has two major elements--shelter construction and evacuation. The effectiveness

of these measures in reducing casualties would depend on the time available for final preparations.

By virtue of the steady growth in their strategic programs, the Soviets have achieved nuclear capabilities that are widely perceived to be at least equal to those of the United States. They are continuing vigorous programs to improve all aspects of their forces, and are in good position to undertake further strategic force improvements in the 1980's. Trends in most of the measures of strategic power will favor the USSR in the early and mid-1980's. Thereafter, trends favoring the Soviets could be eroded by planned U.S. force improvements.